Figure S1. 5′ phosphorylated hsiRNA is rapidly dephosphorylated upon systemic administration A. Cartoons of predicted metabolites synthesized. For color code see Fig.1.A. **B.** HPLC traces of Cy3-PNA/hsiRNA hybrids in liver lysates from mice injected with 5′ -P hsiRNA (red-filled traces). Black traces depict traces corresponding to control guide strands: intact guide strand (full) or the synthesized putative metabolites (1 to 5) indicated in panel A. **C.** Mass spectrometry profiles of 5′ -P hsiRNA metabolites in liver lysates of mice injected with 5′ P hsiRNA. Mice were harvested 2, 24, and 120 hours after intravenous injection.

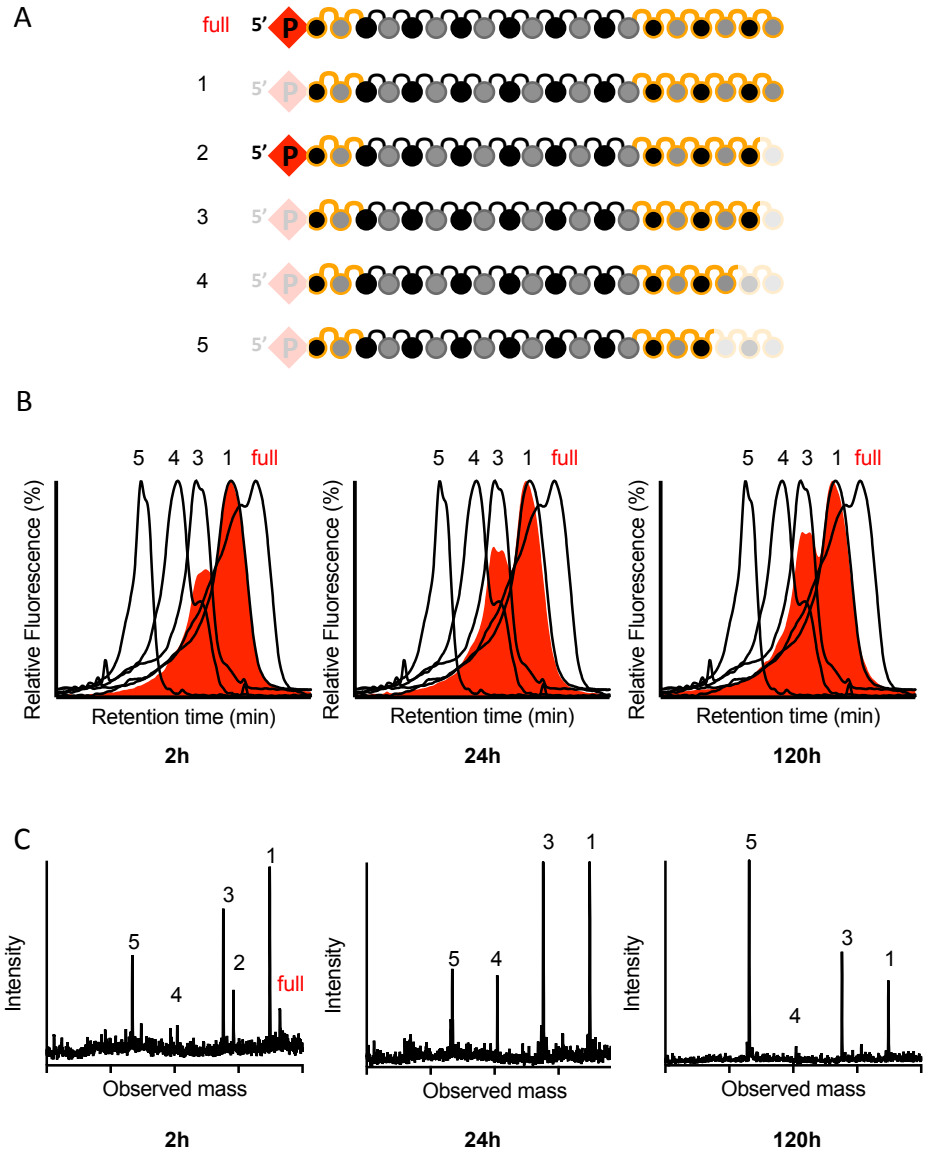


Figure S2. Cartoons and HPLC anion exchange chromatograms of synthesized metabolites. For color code, see Figure 1.

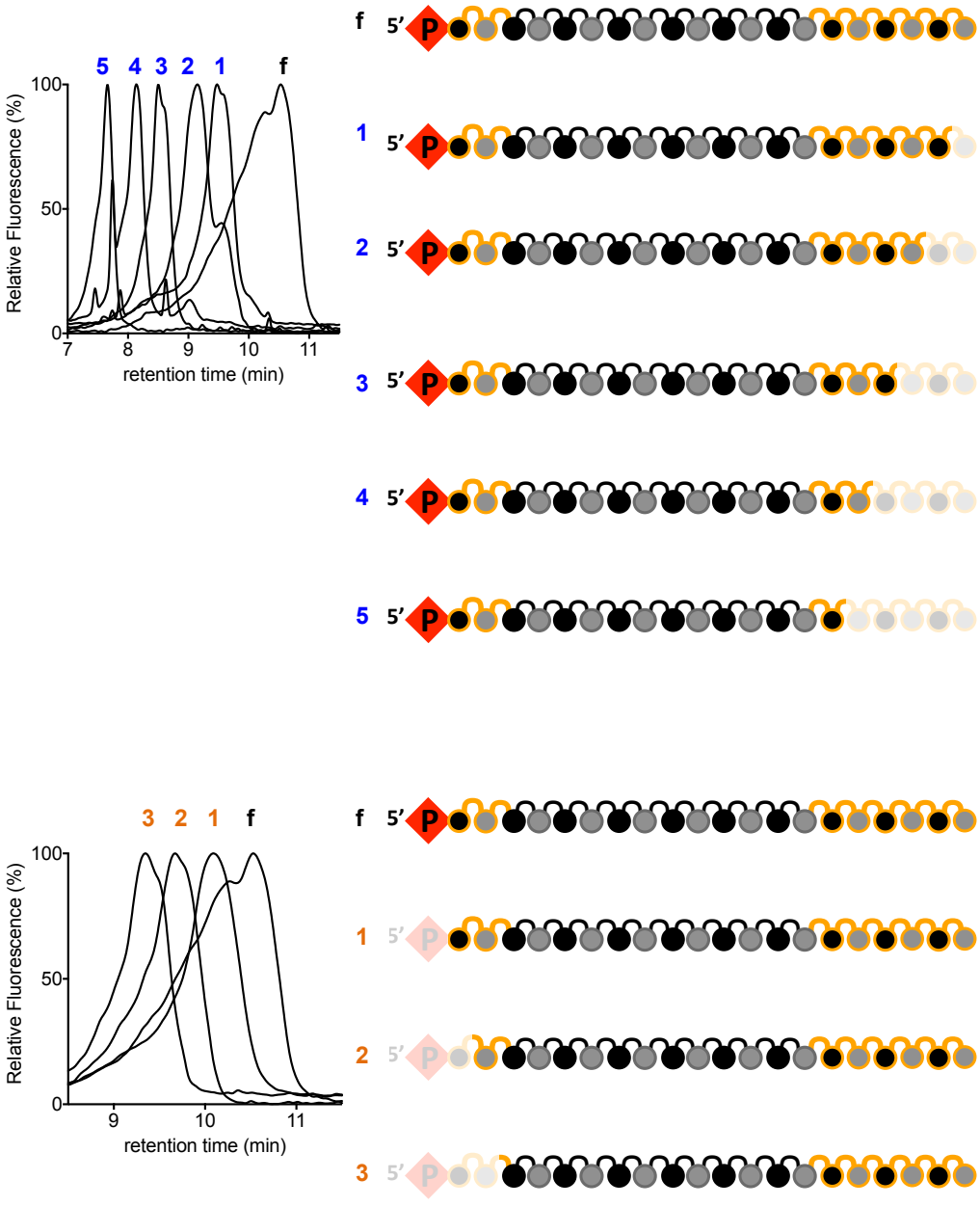
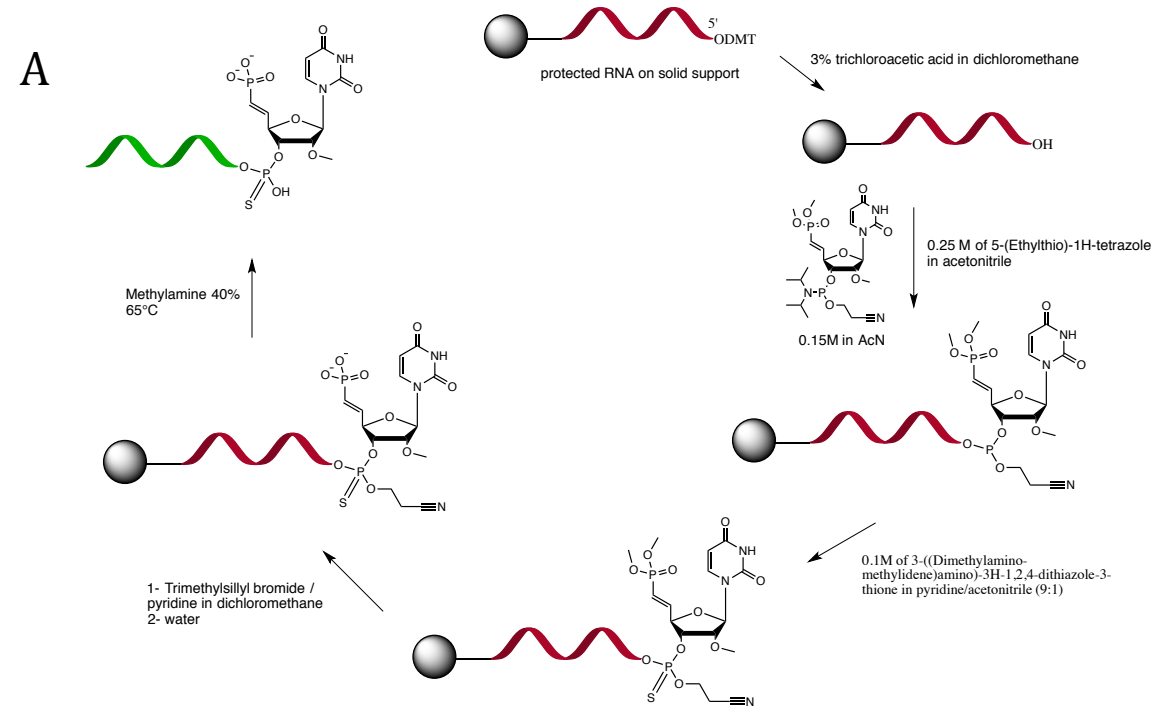


Figure S3. Chemical synthesis of the 5' stabilized antisense stand.

A) (*E*)-vinylphosphonate Uridine phosphoramidite coupling and deprotection procedure of the 5' modified oligonucleotides antisense strand. B) Synthesis pathway of the (*E*)-vinylphosphonate Uridine phosphoramidite.



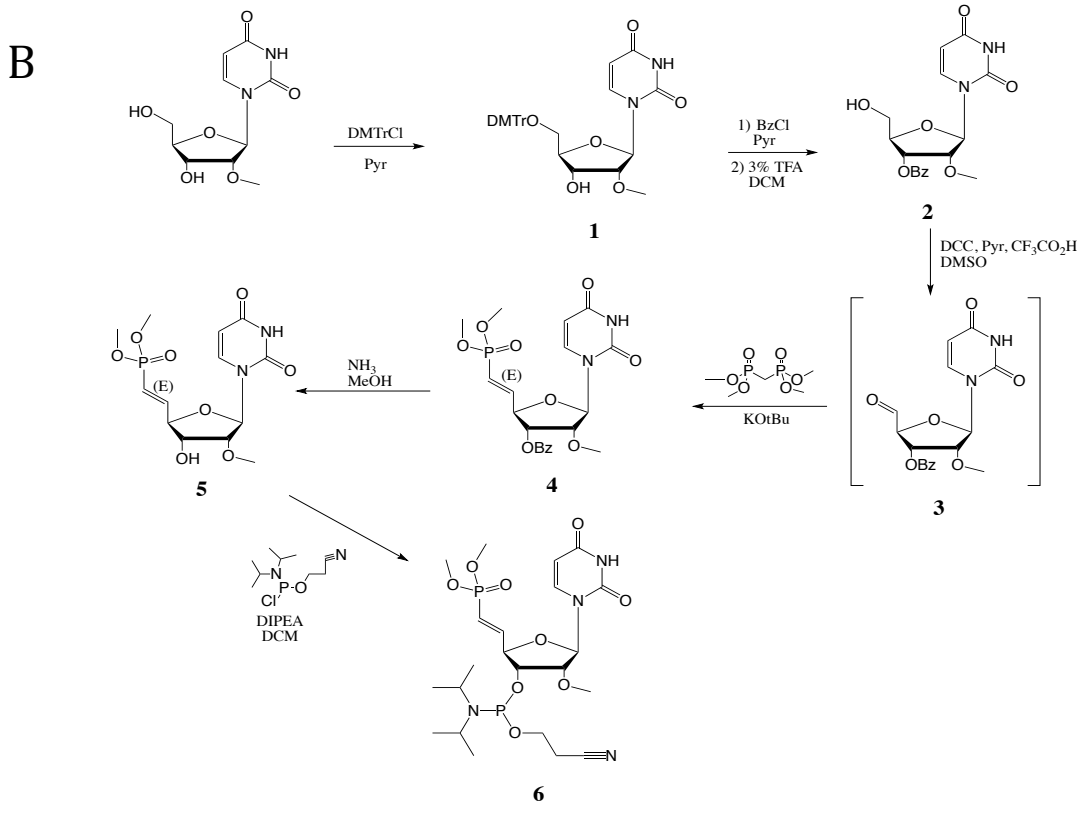
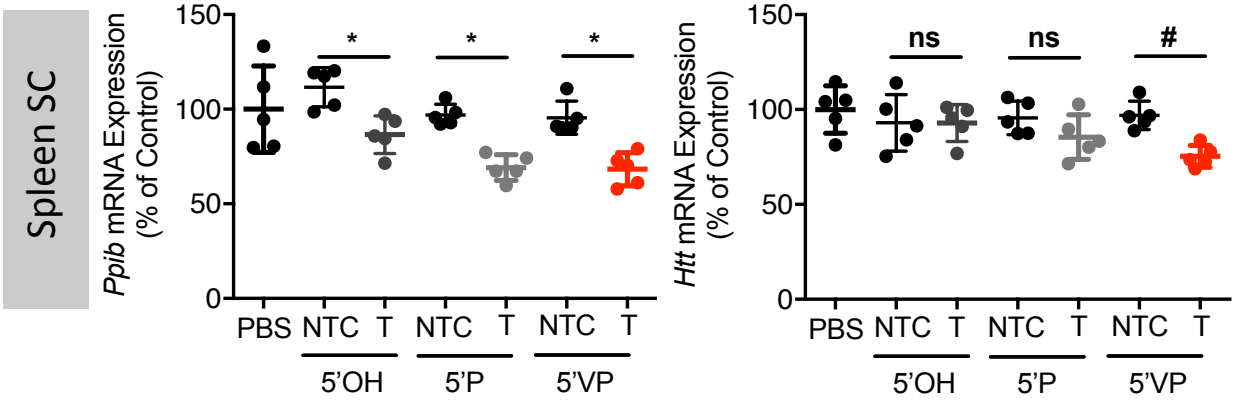


Figure S4. 5′ -*(E)*-vinylphosphonate hsiRNA is comparable to 5′-phosphate hsiRNA in spleen. Column scatter plots showing *Ppib* or *Htt* mRNA levels in the spleensof mice (n=5 per group) treated with 5′ hydroxide (5′-OH), 5′ phosphate (5′-P), or and 5′ -*(E)*-vinylphosphonate (5′ -VP) hsiRNAs by intravenous (IV) of subcutaneous (SC) injection. mRNA levels measured by QuantiGene® assay, were normalized to *Hprt* mRNA and expressed as percent of mRNA levels in PBS-treated animals. NTC, non-targeting control. T, targeting hsiRNA. Significance calculated by ANOVA with Bonferroni′ s correction: ns, non-significant; #, p≤0.1; p*, p≤0.05; **, p≤0.01; ***, p≤0.001; and ****, p≤0.0001.



siRNA ID	Gene	Targeting Position	Strand	Sequence and chemical modification pattern	Calculated mass	Observed mass
5'OH hsiRNA^{HTT}	*HTT*	10150	S	fC#mA#fG.mU.fA.mA.fA.mG.fA.mG.fA.mU.fU#mA#fA	5765.34	5764.22
	HTT	10150	AS	PmU#fU#mA.fA.mU.fC.mU.fC.mU.fU.mU.fA.mC#fU#mG#fA#mU#fA#mU#fA	6540.46	6539.72
5'P hsiRNA^{HTT}	*HTT*	10150	S	fC#mA#fG.mU.fA.mA.fA.mG.fA.mG.fA.mU.fU#mA#fA	5765.34	5764.22
	HTT	10150	AS	PmU#fU#mA.fA.mU.fC.mU.fC.mU.fU.mU.fA.mC#fU#mG#fA#mU#fA#mU#fA	6620.44	6619.69
5'VP hsiRNA^{HTT}	*HTT*	10150	S	fC#mA#fG.mU.fA.mA.fA.mG.fA.mG.fA.mU.fU#mA#fA	5765.34	5764.22
	HTT	10150	AS	vPmU#fU#mA.fA.mU.fC.mU.fC.mU.fU.mU.fA.mC#fU#mG#fA#mU#fA#mU#fA	6616.45	6615.70
5'OH hsiRNA^{PPIB}	*PPIB*	437	S	fC#mA#fA.mA.fU.mU.fC.mC.fA.mU.fC.mG.fU#mG#fA	5654.22	5653.14
	PPIB	437	AS	PmU#fC#mA.fC.mG.fA.mU.fG.mG.fA.mA.fU.mU#fU#mG#fC#mU#fG#mU#fU	6650.55	6649.75
5'P hsiRNA^{PPIB}	*PPIB*	437	S	fC#mA#fA.mA.fU.mU.fC.mC.fA.mU.fC.mG.fU#mG#fA	5654.22	5653.14
	PPIB	437	AS	PmU#fC#mA.fC.mG.fA.mU.fG.mG.fA.mA.fU.mU#fU#mG#fC#mU#fG#mU#fU	6730.53	6729.72
5'VP hsiRNA^{PPIB}	*PPIB*	437	S	fC#mA#fA.mA.fU.mU.fC.mC.fA.mU.fC.mG.fU#mG#fA	5654.22	5653.14
	PPIB	437	AS	vPmU#fC#mA.fC.mG.fA.mU.fG.mG.fA.mA.fU.mU#fU#mG#fC#mU#fG#mU#fU	6726.54	6725.71
5'P hsiRNA^{sFLT1}	*sFLT1*	2283	S	fG#mG#fA.mU.fC.mU.fC.mC.fA.mA.fA.mU.fU#mU#fA	5655.20	5655.11
	sFLT1	2283	AS	PmU#fA#mA.fA.mU.fU.mU.fG.mG.fA.mG.fA.mU#fC#mC#fG#mA#fG#mA#fG	6839.67	6838.80
PNA^{sFLT1}	*sFLT1*	2283	S	Cy3-(OO)-*C*T*C*T*C*G*G*A*T*C*T*C*C*A*A*A*T*T*T*A	6250.2	6253.4
PNA^{PPIB}	*PPIB*	437	S	Cy3-(OO)–*A*A*C*A*G*C*A*A*A*T*T*C*C*A*T*C*G*T*G*A	6317.3	6320.8
PNA^{HTT}	*HTT*	10150	S	CY3-(OO)-*T*A*T*A*T*C*A*G*T*A*A*A*T*A*G*A*T*T*A*A	6370.3	6373.2

Supplementary methods.

Synthesis of oligonucleotides

Oligonucleotides were synthesized on an Expedite ABI DNA/RNA Synthesizer following standard protocols. Each synthesis was done at a 10-µmole scale using a cholesterol-conjugated CPG for the sense strand and a Unylinker® terminus (ChemGenes, Wilmington, MA) for the antisense strand. Phosphoramidites were prepared as 0.15 M solutions for 2´-*O*-methyl (ChemGenes, Wilmington, MA) and 0.13 M for 2´-fluoro (BioAutomation, Irving, Texas) in anhydrous acetonitrile. 0.25 M5-(Benzylthio)-1H-tetrazole in anhydrous acetonitrile was used as coupling activator. Detritylations were performed using 3% dichloroacetic acid in dichloromethane for 80 seconds and capping was performed mixing 16% N-methylimidazole in tetrehydrofurane (CAP A) and 80:10:10 (v/v/v) tetrhydrofurane:acetic anhydride:2,6-lutidine (CAP B) for 15 s. Sulfurizations were carried out with 0.1 M 3-((Dimethylamino-methylidene)amino)-3H-1,2,4-dithiazole-3-thione in (9:1) pyridine:acetonitrile for 3 minutes. Oxidation was performed using 0.02 M iodine in THF:pyridine:water (70:20:10, v/v/v) for 80 s. Phosphoramidite coupling times were 250 s for all amidites. In the case of 5′-phosphate compounds, the Chemgenes chemical phosphorylation reagent bis-cyanoethyl-N,N,diisopropyl CED phosphoramidite was used to introduce the 5′-monophosphate. After completion of the automated synthesis, the solid support was washed with 0.1 M piperidine in acetonitrile for 10 min, then washed with anhydrous acetonitrile and dried under argon.

Coupling and oxidation of 5'-modified vinylphosphonate oligonucleotides

Vinylphosphonate phosphoramidite was dissolved in 40% dichloromethane in acetonitrile to a final concentration of 0.15 sM. For the coupling step, a 4-fold excess of phosphoramidite was loaded on the solid support, and phosphoramidite condensation was carried out for 20 min. A solution of 3% trichloroacetic acid in dichloromethane was used to remove the dimethoxytrityl group from the 5' hydroxyl group of the nucleotide. A solution of 0.25 M 5-(Ethylthio)-1H-tetrazole in anhydrous acetonitrile was used as an activator for the coupling step. Phosphorothioate linkages were introduced using a 0.05 M solution of 3-((dimethylaminomethylene)amino)-3H-1,2,4-dithiazole-5-thione in pyridine:CH3CN (1:1) and a 5 min contact. Solid support was washed with anhydrous acetonitrile then anhydrous dichloromethane and flushed with argon.

Deprotection of the dimethylester vinylphosphonate

Circulate a solution of bromotrimethylsilane and pyridine in dichloromethane (dissolve 0.75 ml bromotrimethylsilane and 0.53 ml pyridine in 28.2 ml CH2Cl2, use 0.5 ml per mmol of solid support) through the vessel containing the CPG for 30 min at room temperature.

Deprotection and purification of oligonucleotides

Sense and antisense strands were cleaved and deprotected in a solution of 40% methylamine for 15 minutes at 65°C. Oligonucleotide solutions were cooled at room temperature for a few minutes and dried under vacuum in a Speedvac. The resulting pellets were suspended in 10 ml 0.1 M triethylammonium acetate buffer (pH 7) and filtered through a 0.2-μm filter. The final purification of oligonucleotides was

performed on an Agilent Prostar System (Agilent, Santa Clara, CA) equipped with a Hamilton HxSil C18 column (150×21.2 mm) using the following conditions: buffer A: (0.1 M triethylammonium acetate, pH 7); buffer B: acetonitrile; gradient: 90% A, 10% B to 10% A, 90% B in 30 minutes; temperature: 55 °C; flow rate: 20 ml/min for the sens strand and with a Dionex NucleoPac PA-100 9x250 using the following conditions: buffer A: 30% acetonitrile in water; buffer B: 30% acetonitrile in 1M $NaClO_4$; gradient: 100% A, 100% A to 30% A in 7min, 80% B in 30 minutes; temperature: 65 °C; flow rate: 10 ml/min for the antisense strand. Purified oligonucleotides were collected and desalted on a HiTrap 5ml SP HP column (GE Healthcare Life Sciences, Marlborough, MA) and lyophilized.

LC-MS analysis of oligonucleotides

The identity of oligonucleotides was determined by LC-MS analysis on an Agilent 6530 accurate-mass Q-TOF LC/MS (Agilent technologies, Santa Clara, CA) using following conditions: buffer A (9 mM triethylamine/100 mM hexafluoroisopropanol in water); buffer B (9 mM triethylamine/100 mM hexafluoroisopropanol in methanol); column: Agilent advancebio oligonucleotides (2.1×50-mm, Agilent technologies, Santa Clara, CA); gradient for sense strand: 0 to 2 min (1% B to 40% B), 2 to 10.5 min (40% B to 100% B); gradient for the antisense strand: 0 to 2 min (1% B to 12% B), 2 to 10.5 min (12% B to 30% B), 10.5 to 11 min (30% B to 100% B).

Mass Spectrometry of hsiRNA metabolites

Tissue punches from liver were lysed as described previously (50 punches per liver). Liver lysates were then injected into DNAPac® PA100 anion exchange column (Thermo Fischer Scientific Inc.) and fractions corresponding to hsiRNA retention time (determined previously using Cy3-labeled hsiRNA) collected by G1364C fraction collector (Agilent 1100 series, #DE40520182) and desalted using HiTrap™ 5 ml desalting column (GE Healthcare) und taken up in buffer A (15mM dibutylamine, 25 mM HFIP in water). Samples were then injected into Q-TOF Premier™ (Waters) Mass Spectrometer using an AdvanceBio Oligonucleotides 2.1x50mm column (Agilent Life Sciences 659750-702) and a gradient of buffer B (20% A in methanol) and samples run in negative mode, capillary voltage 3 kV, temperature 80°C, gas flow rate 50 l/hour, desolvation 600 l/hour.

Chemical synthesis of the (*E*)-vinylphosphonate Uridine phosphoramidite 6.

(*E*)-vinylphosphonate Uridine phosphoramidite was synthesized following the procedure as reported previously (patent PCT Int. Appl. (2011), WO 2011139702 A2 20111110, Lima WF*, et al.* (2012) Single-stranded siRNAs activate RNAi in animals. *Cell* 150(5):883-894.)

Unless otherwise specified, all reactions were carried out in oven dried glassware under an inert atmosphere of argon gaz. Anhydrous solvents were dried using a PureSolv MD 5x Channel Solvant Purification System, tested with Karl Fisher titration then stored on molecular sieves and reagents were purchased from commercial vendors and used without any further purification. Yields refer to

chromatographically isolated yields. Reaction were monitored by thin-layer chromatography (TLC) silica gel 60 F_{254} plates and visualized using UV lamp at 254 nm and developed by a solution of *p*-anisaldehyde (6 mL), H_2SO_4 (8.3 mL), CH_3COOH (2.5 mL) in ethanol (227 mL) followed by heating or stained with Molybdenum Blue reagent for phosphorus containing compounds. Flash column chromatography were performed using Teledyne Isco CombiFlash Rf system and prepaked (silica gel) columns purchased from Bonna-Angela Technologies (Tianjin, China). NMR spectra were recorded on a Variant 400 MHz instrument using residual solvent or 85% phosphoric acid as reference. HPLC-MS Coupling analyses were performed on a Thermofisher Surveyor HPLC system (detection 260 nm) and a LCQ Deca XP plus (MS) with elecrospray ionization mode (ESI +). The UV-detector was connected to the mass spectrometer, and the whole eluting flow was both UV and mass analyzed. Analyses were performed on a column SunFire™ (C18, 3.5µm, 4.6x75mm) and samples were eluted at a flow of 550 mL/min. Eluent A: 0.1% of Formic acid in water; eluent B: 0.1% of Formic acid in acetonitrile. The gradient starts at 97% eluent A for 1min then an increase to 100% eluent B after 9 min, and continues at 100% eluent B until 11 min.

Compound 1. 2'-OMe Uridine (8g, 31mmol) is co-evaporated twice with dry pyridine. Dried nucleotide is then taken up in 62mL of pyridine and dimethoxytrityl chloride (7.96g, 32.5mmole) is added in one portion. The reaction mixture is stirred at room temperature overnight. The reaction mixture is evaporated and the residu solubilized in 500mL of chloroforme then washed with 500mL of sodium

bicarbonate saturated and 500mL of sodium chloride saturated. The organic layer is then dried over sulfate magnesium and concentrated. Purification by column chromatography (silica gel, eluting with 0 to 100% ethyl acetate in hexane) provided the nucleoside compound **1** (12.1g, 70%).

Mass ESI+ : *m/z* 583.1 $[M+Na]^+$

^{1}H NMR (400 MHz, CHLOROFORM-*d*) δ ppm 1.23 - 1.28 (m, 1 H) 2.03 - 2.05 (m, 1 H) 2.54 (q, *J*=7.42 Hz, 1 H) 3.51 - 3.80 (m, 12 H) 3.92 - 4.04 (m, 2 H) 4.12 (q, *J*=7.16 Hz, 2 H) 4.25 (br s, 1 H) 4.36 - 4.50 (m, 1 H) 5.25 (d, *J*=8.21 Hz, 1 H) 5.96 (d, *J*=1.17 Hz, 1 H) 6.82 - 6.86 (m, 3 H) 6.98 - 7.15 (m, 2 H) 7.17 - 7.39 (m, 9 H) 7.52 (br s, 1 H) 7.63 (br s, 1 H) 8.05 (d, *J*=8.21 Hz, 1 H)

Compound 2. The nucleotide compound **1** is co-evaporated twice with pyridine anhydrous. Benzoyl chloride (2.5mL, 21.4mmol) is added dropwise to a solution of nucleotide compound 1 (10g, 17.84mmol) in pyridine (43mL) at 0°C then allowed to stirred at room temperature for 3h. The reaction is then quenched with water and then partitioned between 500mL of ethyl acetate and 500mL of water. The organic layer is further washed with 500mL of water, 500mL of sodium chloride saturated, dried over magnesium sulfate and concentrated to provide the crude benzoyl protected nucleoside which was used without further protection.

Trifluoroacetic acid (8mL) is added to a solution of the crude nucleoside from above and triethylsilane (8mL) in dichloromethane (80mL) and the reaction is stirred for 5h at room temperature during which time the reaction turned light yellow from an initial bright orange. Methanol (16mL) is added and stirred for 10min then the

solvent is removed on a rotary evaporator. The residue is dissolved in ethyl acetate (500mL) and the organic layer is carefully washed with water (500mL), sodium bicarbonate saturated (500mL), sodium chloride saturated (500mL), dried over magnesium sulfate and concentrated. The resulting white solid is suspended in hexane and stirred vigorously and collected by filtration and further washed with additional hexanes to provide nucleoside compound **2** (5.69g, 88% over 2 steps).

Mass ESI+ : *m/z* 362.8 $[M+H]^+$, 385.0 $[M+Na]^+$, 746.8 $[2M+Na]^+$

^{1}H NMR (400 MHz, DMSO-d_6) δ ppm 3.20 - 3.35 (m, 3 H) 4.17 - 4.28 (m, 2 H) 5.37 (br s, 1 H) 5.44 - 5.57 (m, 1 H) 5.70 - 5.77 (m, 1 H) 5.97 - 6.02 (m, 1 H) 7.53 - 7.60 (m, 2 H) 7.69 (t, *J*=6.29 Hz, 1 H) 7.94 - 8.04 (m, 3 H) 11.45 (br s, 1 H)

Compound 4. Dicyclohexylcarbodimide (3.64g, 17.7mmol) is added to a solution of the alcohol **3** (4g, 11.1mmol) and pyridinium trifluoroacetate (2.13g, 11.1mmol) in dimethylsulfoxide (48mL) and the reaction mixture is allowed to stir at room temperature for 6 hours. In a separate flask, a solution of potassium terbutoxide (2.48g in 15mL of tetrahydrofurane) is added to a solution of tetramethylmethylenediphosphonate (4.1mL, 22.1mmol) in tetrahydrofurane (30mL). After stirring for 10 minutes at room temperature, this flask is cooled in an ice bath and nucleoside solution is added *via* a cannula. After stirring at room temperature for 2 hours, the reaction is diluted with ethyl acetate (400mL) and the organic layer is wased with 400 mL of water, brime, dried over magnesium sulfate and concentrated. Purification by

Chromatography on a silica gel column (0% to 10% ethanol in dichloromethane) afforded the desired phosphonate **4** (1.65g, 32%).

Mass ESI+ : *m/z* 467.0 $[M+H]^+$, 489.1 $[M+Na]^+$, 932.9 $[2M+H]^+$, 954.9 $[2M+Na]^+$

^1H NMR (400 MHz, CHLOROFORM-*d*) δ ppm 2.16 - 2.16 (m, 1 H) 3.43 (s, 3 H) 3.72 - 3.77 (m, 6 H) 4.21 (t, *J*=4.88 Hz, 1 H) 4.85 - 4.86 (m, 1 H) 5.17 (t, *J*=5.86 Hz, 1 H) 5.81 (s, 1 H) 5.83 (s, 1 H) 6.03 - 6.05 (m, 1 H) 6.09 (s, 1 H) 6.97 (s, 1 H) 7.26 - 7.31 (m, 1 H) 7.33 (s, 1 H) 7.45 - 7.49 (m, 2 H) 7.59 (s, 1 H) 7.61 (s, 1 H) 8.06 (dd, *J*=8.40, 1.37 Hz, 2 H) 9.54 (br s, 1 H)

^{31}P NMR (400 MHz, CHLOROFORM-*d*) δ ppm 19.20

Compound 5. The vinyl nucleotide compound (1.2g, 2.57mmol) is solubilized with 7N ammonia in methanol (100mL) and stirred at room temperature for 6h. The solvant is removed on a rotary evaporator and the crude is purified on a silica gel column (40% to 100% of acetone in dichloromethane) to provide compound (829.6mg, 89%).

Mass ESI+ : *m/z* 363.0 $[M+H]^+$, 385.1 $[M+Na]^+$, 746.9 $[2M+Na]^+$

^1H NMR (400 MHz, CHLOROFORM-*d*) δ ppm 1.25 (s, 1 H) 1.58 (s, 9 H) 2.17 (s, 1 H) 2.82 (d, *J*=9.38 Hz, 1 H) 3.56 - 3.70 (m, 5 H) 3.72 - 3.83 (m, 9 H) 3.96 (td, *J*=8.69, 5.67 Hz, 1 H) 4.41 - 4.46 (m, 1 H) 5.79 (d, *J*=8.21 Hz, 1 H) 5.91 (d, *J*=1.95 Hz, 1 H) 6.05 (s, 1 H) 6.09 - 6.11 (m, 1 H) 6.93 (s, 1 H) 7.25 (s, 1 H) 7.27 (s, 1 H) 8.25 (br s, 1 H)

^{31}P NMR (400 MHz, CHLOROFORM-*d*) δ ppm 19.35

Compound 6. The deprotected compound (660mg, 1.82mmol) is co-evarorated twice with anhydrous pyridine then dried on vacuum for 1h. To a solution of this vinyl nucleotide in dichloromethane (35mL) is added anhydrous diisopropylethylamine and the reaction is stirred for 10min under argon at room temperature. Then 2-cyanoethyl N,N-diisopropylphosphoramido chloride (0.9mL, 4mmol) was added dropwise and the reaction mixture stirred at room temperature for 3h. 50mL of DCM is then added to the reaction mixture and washed twice with mL of $NaCl_{sat}$. The organic layer is dried over $MgSO_4$ and the solvant evaporated. The crude is purified on a silica gel column (0% to 5% of methanol in dichloromethane) to afforded the desired vinylphosphonate phosphoramidite (839mg, 82%).

Mass ESI+ : *m/z* 585.2 $[M+Na]^+$

^1H NMR (400 MHz, CHLOROFORM-*d*) δ ppm 1.11 - 1.27 (m, 14 H) 1.59 (s, 5 H) 2.55 - 2.73 (m, 2 H) 2.80 (br dd, *J*=8.40, 5.67 Hz, 1 H) 3.49 - 3.56 (m, 4 H) 3.58 - 3.80 (m, 10 H) 3.85 - 3.96 (m, 2 H) 4.05 - 4.13 (m, 1 H) 4.64 (br s, 1 H) 5.76 (dd, *J*=8.21, 6.64 Hz, 1 H) 5.91 (dd, *J*=13.29, 3.13 Hz, 1 H) 5.97 - 6.09 (m, 1 H) 6.80 - 7.06 (m, 1 H) 7.27 - 7.31 (m, 1 H) 8.16 (br s, 1 H)

^{31}P NMR (400 MHz, CHLOROFORM-*d*) δ ppm 19.28, 150.36

Table S1. Sequence of oligonucleotides Nomenclature, targeted gene and gene region, sequence and mass of oligonucleotides used in this study. #: phosphorothioate, m: 2'-*O*-Me, f: 2'-F, *: PNA

siRNA ID	Gene	Targeting Position	Strand	Sequence and chemical modification pattern	Calculated mass	Observed mass
5'OH hsiRNA^{HTT}	*HTT*	10150	S	fC#mA#fG.mU.fA.mA.fA.mG.fA.mG.fA.mU.fU#mA#fA	5765.34	5764.22
	HTT	10150	AS	PmU#fU#mA.fA.mU.fC.mU.fC.mU.fU.mU.fA.mC#fU#mG#fA#mU#fA#mU#fA	6540.46	6539.72
5'P hsiRNA^{HTT}	*HTT*	10150	S	fC#mA#fG.mU.fA.mA.fA.mG.fA.mG.fA.mU.fU#mA#fA	5765.34	5764.22
	HTT	10150	AS	PmU#fU#mA.fA.mU.fC.mU.fC.mU.fU.mU.fA.mC#fU#mG#fA#mU#fA#mU#fA	6620.44	6619.69
5'VP hsiRNA^{HTT}	*HTT*	10150	S	fC#mA#fG.mU.fA.mA.fA.mG.fA.mG.fA.mU.fU#mA#fA	5765.34	5764.22
	HTT	10150	AS	vPmU#fU#mA.fA.mU.fC.mU.fC.mU.fU.mU.fA.mC#fU#mG#fA#mU#fA#mU#fA	6616.45	6615.70
5'OH hsiRNA^{PPIB}	*PPIB*	437	S	fC#mA#fA.mA.fU.mU.fC.mC.fA.mU.fC.mG.fU#mG#fA	5654.22	5653.14
	PPIB	437	AS	PmU#fC#mA.fC.mG.fA.mU.fG.mG.fA.mA.fU.mU#fU#mG#fC#mU#fG#mU#fU	6650.55	6649.75
5'P hsiRNA^{PPIB}	*PPIB*	437	S	fC#mA#fA.mA.fU.mU.fC.mC.fA.mU.fC.mG.fU#mG#fA	5654.22	5653.14
	PPIB	437	AS	PmU#fC#mA.fC.mG.fA.mU.fG.mG.fA.mA.fU.mU#fU#mG#fC#mU#fG#mU#fU	6730.53	6729.72
5'VP hsiRNA^{PPIB}	*PPIB*	437	S	fC#mA#fA.mA.fU.mU.fC.mC.fA.mU.fC.mG.fU#mG#fA	5654.22	5653.14
	PPIB	437	AS	vPmU#fC#mA.fC.mG.fA.mU.fG.mG.fA.mA.fU.mU#fU#mG#fC#mU#fG#mU#fU	6726.54	6725.71
5'P hsiRNA^{sFLT1}	*sFLT1*	2283	S	fG#mG#fA.mU.fC.mU.fC.mC.fA.mA.fA.mU.fU#mU#fA	5655.20	5655.11
	sFLT1	2283	AS	PmU#fA#mA.fA.mU.fU.mU.fG.mG.fA.mG.fA.mU#fC#mC#fG#mA#fG#mA#fG	6839.67	6838.80
PNA^{sFLT1}	*sFLT1*	2283	S	Cy3-(OO)-*C*T*C*T*C*G*G*A*T*C*T*C*C*A*A*A*T*T*T*A	6250.2	6253.4
PNA^{PPIB}	*PPIB*	437	S	Cy3-(OO)–*A*A*C*A*G*C*A*A*A*T*T*C*C*A*T*C*G*T*G*A	6317.3	6320.8
PNA^{HTT}	*HTT*	10150	S	CY3-(OO)-*T*A*T*A*T*C*A*G*T*A*A*A*T*A*G*A*T*T*A*A	6370.3	6373.2